WHAT IS CLAIMED IS:

1	١.	A method for processing speech, comprising:
		synthesizing a first filter having at least one or more pseudo-cepstral
coefficie	ents bas	sed on a set of linear predictive coding coefficients, a pseudo-cepstral
coefficie	ent beir	ng a parameter relating to a pseudo-cepstrum domain existing between the
linear pr	edictiv	re coding domain and the line spectral frequency domain; and
		processing one or more frames of speech using the first filter.
2	2.	The method of claim 1, wherein the first filter emphasizes speech
frequenc	cy com	ponents related to at least one formant based on the set of linear predictive
coding c	oeffici	ents and de-emphasizes speech frequency components related to at least
one spec	ctral va	lley based on the set of linear predictive coding coefficients.
3	3.	The method of claim 2, wherein the first filter compensates for spectral
tilt.		
2	4.	The method of claim 2, wherein the one or more pseudo-cepstral
coefficie	ents are	e derived based on the formula:
		$H_S(z) \cong (P_M(z/\alpha_1) Q_M(z/\alpha_2)) / A_M^2(z/\beta);$
		wherein $P_M(z) = A_M(z) + z^{-(M+1)} A_M(z^{-1}), Q_M(z) = A_M(z) - z^{-(M+1)} A_M(z^{-1})$
and α_1 ,	α_2 and	β are control parameters, and wherein $A_M(z)$ relates to a linear predictive
coding t	ransfe	function and M is the order of the linear predictive coding transfer
function	ı.	
. 4	5.	The method of claim 4, wherein $0 < \alpha_1$, $0 < \alpha_2$ and $\beta < 1.0$.
(6.	The method of claim 4, wherein $\alpha_1 + \alpha_2 = \beta$.
7	7.	The method of claim 2, wherein the one or more pseudo-cepstral
coeffici	ents ar	e derived based on the formula:
		$H_S(z) \cong (P_M(z/\alpha_1) Q_M(z/\alpha_2)) / A_M(z/2\beta);$
		wherein $P_M(z) = A_M(z) + z^{-(M+1)} A_M(z^{-1}), Q_M(z) = A_M(z) - z^{-(M+1)} A_M(z^{-1})$
and α_1 ,	α_2 and	β are control parameters, and wherein $A_M(z)$ relates to a linear predictive
coding t	transfe	r function and M is the order of the linear predictive coding transfer
function	1.	
;	8.	The method of claim 4, wherein $0 < \alpha_1$, $0 < \alpha_2$ and $\beta < 0.5$

The method of claim 5, wherein $\alpha_1 + \alpha_2 = 2\beta$.

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Docket No. 2000-0141

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                10.
                        The method of claim 2, wherein the one or more pseudo-cepstral
        coefficients are derived based on the formula:
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                        H_{S}^{m}(z) \cong (P_{m}(z/\alpha_{1}) Q_{m}(z/\alpha_{2})) / A_{M}(z/2\beta);
3
                        wherein \alpha_1, \alpha_2 and \beta are control parameters, P_m(z) = A_m(z) + z^{-(m+1)} A_m(z^{-1})
4
        <sup>1</sup>), Q_m(z) = A_m(z) - z^{-(m+1)} A_m(z^{-1}), and wherein A_M(z) relates to a linear predictive coding
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        transfer function and M is the order of the linear predictive coding transfer function, and
6
        wherein A_m(z) is a second linear predictive coding transfer function based on A_M(z), m is
7
        the order of A_m(z) and 1 \le m \le M.
8
                        The method of claim 10, wherein 0 < \alpha_1, 0 < \alpha_2 and \beta < 0.5.
                11.
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                        The method of claim 10, wherein \alpha_1 + \alpha_2 = 2\beta.
                12.
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                        A filter that processes speech, comprising:
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                13.
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                        two or more pseudo-cepstral coefficients based on a set of linear predictive
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        coding coefficients, a pseudo-cepstral coefficient being a parameter relating to a pseudo-
        cepstrum domain existing between the LPC domain and the line spectral frequency
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5
        domain.
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                14.
                        The filter of claim 13, wherein the filter emphasizes speech frequency
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        components related to at least one formant based on the set of linear predictive coding
3
        coefficients and de-emphasizes speech frequency components related to at least one
        spectral valley based on the set of linear predictive coding coefficients.
4
                15.
                        The filter of claim 14, wherein the filter compensates for spectral tilt.
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                16.
                        The filter of claim 14, wherein the one or more pseudo-cepstral
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        coefficients are derived based on the formula:
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                        H_S(z) \cong (P_M(z/\alpha_1) Q_M(z/\alpha_2)) / A_M(z/2\beta);
                        wherein P_M(z) = A_M(z) + z^{-(M+1)} A_M(z^{-1}), Q_M(z) = A_M(z) - z^{-(M+1)} A_M(z^{-1})
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        and \alpha_1, \alpha_2 and \beta are control parameters, and wherein A_M(z) relates to a linear predictive
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6
        coding transfer function and M is the order of the linear predictive coding transfer
7
        function.
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- 1 The filter of claim 16, wherein $0 < \alpha_1$, $0 < \alpha_2$ and $\beta < 0.5$.
- 1 18. The filter of claim 16, wherein $\alpha_1 + \alpha_2 = 2\beta$.
- 1 19. The filter of claim 16, wherein the one or more pseudo-cepstral coefficients are derived based on the formula:

3 $H^{m}_{S}(z) \cong (P_{m}(z/\alpha_{1}) Q_{m}(z/\alpha_{2})) / A_{M}(z/2\beta);$

- wherein α_1 , α_2 and β are control parameters, $P_m(z) = A_m(z) + z^{-(m+1)} A_m(z^{-1})$
- 5), $Q_m(z) = A_m(z) z^{-(m+1)} A_m(z^{-1})$, and wherein $A_M(z)$ relates to a linear predictive coding
- 6 transfer function and M is the order of the linear predictive coding transfer function, and
- 7 wherein $A_m(z)$ is a second linear predictive coding transfer function based on $A_M(z)$, m is
- 8 the order of $A_m(z)$ and $1 \le m \le M$.
- 1 20. The filter of claim 19, wherein $0 < \alpha_1$, $0 < \alpha_2$ and $\beta < 0.5$.
- 1 21. The filter of claim 19, wherein $\alpha_1 + \alpha_2 = 2\beta$.